

WHAT IS CLAIMED IS:

1. A method of segmenting acoustic data for use in a speech recognition process,

comprising:

receiving frames of acoustic data;

5 determining cepstral coefficients for each of the received frames of acoustic data; and

segmenting the received frames of acoustic data based on the determined cepstral coefficients.

2. The method of claim 1, further comprising:

determining a number of peaks in the cepstral coefficients for each received frame of acoustic data.

3. The method of claim 2, wherein the segmenting of the received frames of acoustic data further comprises:

segmenting the received frames of acoustic data based on the determined number of peaks in the cepstral coefficients for each received frame of acoustic data.

4. The method of claim 2, further comprising:

comparing a first number of peaks in the cepstral coefficients of a first one of the received frames with a second number of peaks in the cepstral coefficients of at least a second one of the received frames, wherein the segmenting of the received frames of acoustic data is

5 further based on the comparison of the first and second number of peaks.

5. A speech recognition system, comprising:

an acoustic front end configured to:

receive frames of acoustic data,

determine cepstral coefficients for each of the received frames of acoustic

5 data; and

a processing unit configured to:

determine a number of peaks in the cepstral coefficients for each of the

received frames of acoustic data,

10 compare a first number of peaks in the cepstral coefficients of a first one of the
received frames with a second number of peaks in the cepstral coefficients of at least a
second one of the received frames, and

segment the received frames of acoustic data based on the comparison.

6. A computer-readable medium containing instructions for controlling at least one
processing unit to perform a method of segmenting acoustic data for use in a speech
recognition process, the method comprising:

receiving cepstral coefficients corresponding to frames of acoustic data; and

5 segmenting the frames of acoustic data based on the received cepstral coefficients.

7. The computer-readable medium of claim 6, the method further comprising:

determining a number of peaks in the cepstral coefficients corresponding to each of
the frames of acoustic data.

8. The computer-readable medium of claim 7, wherein the segmenting of the frames of acoustic data is further based on the determined number of peaks in the cepstral coefficients corresponding to each of the frames of acoustic data.

9. The computer-readable medium of claim 7, the method further comprising:
comparing a first number of peaks in the cepstral coefficients of a first one of the frames with a second number of peaks in the cepstral coefficients of at least a second one of the frames, wherein the segmenting of the frames of acoustic data is further based on the
5 comparison of the first and second number of peaks.

10. A method of recognizing patterns in acoustic data, comprising:
receiving frames of acoustic data;
determining segmentation information corresponding to the received frames of
acoustic data;
5 determining at least one weighting parameter based on the determined segmentation
information; and
recognizing patterns in the received frames of acoustic data using the at least one
weighting parameter.

11. The method of claim 10, further comprising:

determining cepstral coefficients for the received frames of acoustic data, wherein the determining of the segmentation information is based on the determined cepstral coefficients.

12. The method of claim 10, further comprising:

determining, based on the frames of acoustic data, recognition hypothesis scores using a Hidden Markov Model.

13. The method of claim 12, further comprising:

modifying the recognition hypothesis scores based on the at least one weighting parameter.

14. The method of claim 13, wherein the recognizing patterns in the frames of acoustic data further uses the modified recognition hypothesis scores.

15. A speech recognition system, comprising:

an acoustic front end configured to receive frames of acoustic data;

a processing unit configured to:

determine segmentation information corresponding to the received frames of

5 acoustic data,

determine at least one weighting parameter based on the determined

segmentation information, and

recognize patterns in the received frames of acoustic data using the at least one weighting parameter.

16. The system of claim 15, the acoustic front end further configured to:

determine cepstral coefficients for the received frames of acoustic data; and

the processing unit further configured to:

determine the segmentation information corresponding to the received frames

5 of acoustic data based on the determined cepstral coefficients.

17. The system of claim 15, the processing unit further configured to:

determine, based on the received frames of acoustic data, recognition hypothesis scores using a Hidden Markov Model.

18. The system of claim 16, the processing unit further configured to:

modify the recognition hypothesis scores based on the at least one weighting parameter.

19. The system of claim 17, the processing unit further configured to:

recognize patterns in the received frames of acoustic data further using the modified recognition hypothesis scores.

20. A method of recognizing patterns in acoustic data, comprising:

receiving frames of acoustic data;

determining first segmentation information corresponding to the received frames of acoustic data;

- 5 determining second segmentation information corresponding to the received frames of acoustic data;

 determining at least one weighting parameter based on the determined second segmentation information; and

- recognizing patterns in the received frames of acoustic data using the at least one
10 weighting parameter.

21. The method of claim 20, further comprising:

 determining cepstral coefficients for the received frames of acoustic data, wherein the determining of the second segmentation information is based on the determined cepstral coefficients.

22. The method of claim 20, further comprising:

 comparing the determined first and second segmentation information.

23. The method of claim 22, wherein the recognizing patterns in the frames of acoustic data is based on the comparison of the first and second segmentation information.

24. The method of claim 20, further comprising:

 determining, based on the received frames of acoustic data, recognition hypothesis scores using a Hidden Markov Model.

25. The method of claim 24, further comprising:

modifying the recognition hypothesis scores based on the at least one weighting parameter.

26. The method of claim 25, further comprising:

re-ordering the modified recognition hypothesis scores.

27. The method of claim 26, wherein the recognizing of the patterns in the frames of acoustic data further uses the re-ordered modified recognition hypothesis scores.

28. The method of claim 25, wherein the recognizing of the patterns in the frames of acoustic data further uses the modified recognition hypothesis scores.

29. A speech recognition system, comprising:

means for receiving frames of acoustic data;

means for determining first segmentation information corresponding to the received frames of acoustic data;

5 means for determining second segmentation information corresponding to the received frames of acoustic data;

means for determining at least one weighting parameter based on the determined second segmentation information; and

means for recognizing patterns in the frames of acoustic data using the at least one weighting parameter.

30. A data structure encoded on a computer readable medium, comprising:
cepstral coefficient data corresponding to each frame of a plurality of frames of acoustic data, the cepstral coefficient data including a number of peaks in cepstral coefficients corresponding to each frame of acoustic data; and

5 segmentation data indicating segmentation of the frames of acoustic data based on the cepstral coefficient data.

31. An acoustic recognition system, comprising:

an acoustic front end configured to:

receive frames of acoustic data;

a processing unit configured to generate end frame numbers for each phoneme or

5 Hidden Markov Model (HMM) state contained in the received frames; and

a trainer/HMM decoder configured to use the generated end frame numbers for determining weighted scores that can be used for recognition of acoustic events contained in the received frames of acoustic data.

32. An acoustic recognition system, comprising:

an acoustic front end configured to receive frames of acoustic data; and

a processing unit configured to:

generate end frame numbers for each phoneme or Hidden Markov Model

5 (HMM) state contained in the received frames of acoustic data, and

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determining weighted scores based on the generated end frame numbers that
can be used for recognition of acoustic events contained in the received frames of
acoustic data.